'How To Forge Coins For For Fun And Profit'

Numismatics Faces Major Problem As Coin Forgery Nears Perfection

Report On Situation Given At International Congress

By Eric Newman
St. Louis, Mo.

(The following paper by the American numismatist, Eric P. Newman, was presented at the International Numismatic Congress held in Copenhagen, Denmark, on August 28, 1967. Permission was granted by the author for Coin World to publish this paper, following its appearance in the November, 1967, issue of The Numismatist. — Editor.)

I am not a coin forger and regret that I cannot speak to you from experience. Unfortunately, those who could share with you their actual accomplishments in forgery are not accustomed to speaking before learned organizations or writing up their findings. It might be helpful if they would.

In spite of the worldwide emphasis on numismatic education, there is no attempt on my part to be of assistance to forgers. They seem well able to obtain not only adequate knowledge to pursue their activities but to dream up romantic tales of discovery to give counterfeit provenance to their fake products.

Throughout history there has been hesitancy by some law enforcement bodies and by some numismatists to make public disclosure of the techniques of coin forgery and of the detailed descriptions of forgeries, because of a fear of helping forgers to improve their products and correct their errors. There have always been wishful thinkers who believed that forgers always make enough mistakes in their work to permit detection. In the past most products of forgery generally have left tell-tale evidence but a substantial number have escaped recognition. False coins have sometimes been detected through the ignorance of the forger, but more often through his inability to obtain the use of proper equipment.

Times have changed. Just as the advances in the peaceful use of atomic energy and space exploration have also resulted in more devastating means of warfare, so the advances in metallurgy and engineering have presented forgers with many superb ways of producing false coins.

The menace of forgery to numismatics has now become a major problem. In recent years, counterfeiting money for the purpose of circulation has been virtually confined to paper money. Striking false coins for circulation has become discouraging to forgers from an economic point of view. In the case of common gold coins which are no longer in circulation as money and which are traded as a commodity in world markets, on the other hand, coin forgery in recent years has had a great harvest.

Forgeries which are merely casts of struck genuine coins have fortunately become less and less of a problem because all of those made in the past and those now produced can be identified even if they have the proper weight, measurements, specific gravity, metallic content, and general appearance, and even if they lack casting bubbles, raised lumps, streaks, weakness in detail, casting ports, natural toning, etc. X-ray diffraction techniques or microscopic examination can each be used to determine specifically whether the crystal structure of the metal is the result of undisturbed transformation from liquid to solid form by cooling or whether the crystal structure is distorted by being forced in the striking to conform to the configuration of dies. Admittedly this type of testing is somewhat limited in general availability, but it is positive.

Coins reproduced by the reuse of obsolete dies or punches, or transfer dies made from them, such as the United States 1804 silver dollar and old coins now being reproduced in some European Mints involve the participation of Mint officials, and are not within the scope of this presentation.

Forgeries prepared with hand cut false dies are also excluded, as the many differences between them and genuine coins are readily observed.

Fantasies prepared from hand cut dies and with imaginative designs are not a serious problem, but in some instances even their status remains unchallenged in numismatic literature.

For the reasons above outlined this study is confined (1) to the deliberate production of false coins for numismatic purposes; (2) to false coins struck from false dies; and (3) to false dies made directly or indirectly from genuine coins. This activity may be open or clandestine, legal or illegal, with or without a profit motive, within an official Mint or privately undertaken.

ADVANTAGE OF FALSE DIES:

The principal advantages in the use of false dies are that the planchets to be struck can be cut to perfect size, adjusted as to proper weight, polished, annealed, edges upset, milled, etc. The planchets can also be made out of genuine coins of a similar type to the false pieces to be prepared, because of the availability of quantities of common worn or damaged coins from all periods. The proper metal mix and the variation in natural impurities are therefore not a problem for the forger, if he reworks genuine coins into planchets.

With false dies, desired quantities of forgeries can be readily made once the preparatory die work is complete. There is no time consuming repetition of the major part of the reproduction process as in the case of sand casting or the lost wax method of casting.

False dies have great flexibility as to their use. False coins can be struck in any desired metal. If the original genuine coin is in copper, the forgery can be made in silver, in gold, or any other metal. This makes it unnecessary in some cases to obtain a rare piece for the purpose. This was the plan used in 1962 in England in the production of forgeries of patterns of seventeenth century Irish farthings, known as St. Patrick pieces.

With false dies, the obverse of one coin can be paired with the reverse of another, either to produce a forgery of a rare combination or to produce an unknown combination. It also enables a die with any Mint mark to be paired with a die bearing any existing date, if the Mint mark and date appear on opposite faces. Here again, it is often unnecessary to obtain a rare piece to copy.

With false dies there can be created artificial errors, simulated trial strikes, overstrikes of genuine coins, double strikes, uniface pieces, brokages, pieces of varying thickness, undersized or oversized planchets, square or octagonal planchets, faces in improper juxtaposition, and other seeming Mint errors.

With false dies counterfeit countermarks can be added to genuine coins such as has been done with many coins which circulated in the West Indies, the Philippine Islands, and other areas.

MAKING FALSE DIES:

By Direct Transfer:

Each of the three Mints of the United States during World War II made 1943 cents out of steel covered with a very thin zinc dip. This gave the forgers an unusual opportunity. A die in unhardened steel or other metal could be made by pressure transfer from the coin itself in the same way as normal dies are made in a hubbing press. Using this process, some false 1943 cents in copper appeared.

By Pantograph:

A pantograph with the scanner and the drill on a one-to-one ratio is capable of making false dies from coins. This procedure follows the principles of the standard Janvier reducing machine used in Mints to cut dies from large galvanos of the artist's sculpture. It leaves spiral marks on the die, which must be skillfully polished away. A skilled engraver, however, can guide the drill by hand to avoid the spiral marks. It would not be surprising if an electronic scanner could be made for the purpose.

By Impact:

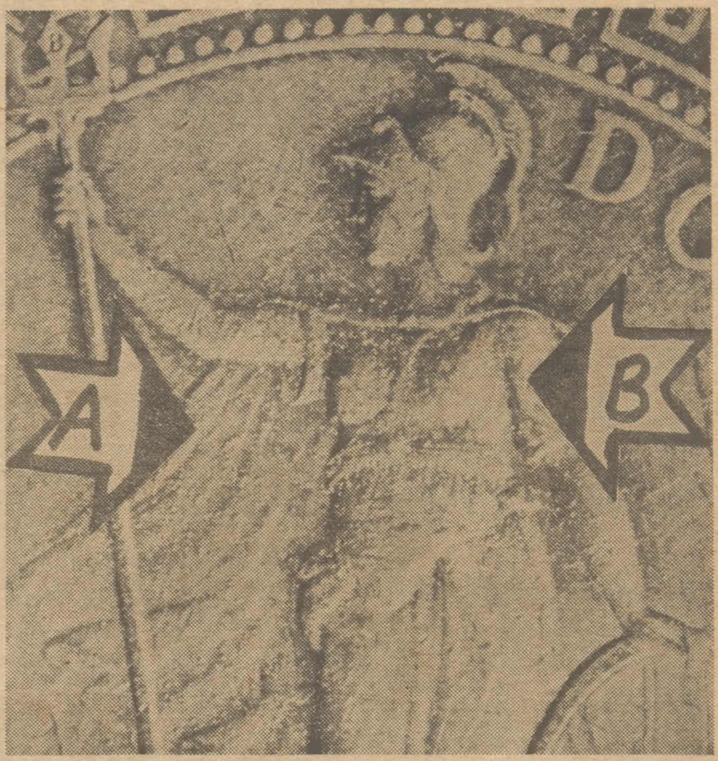
Dies for forgeries can be produced by impact in several ways. The coin to be copied can be firmly mounted on the free end of a pivoted bar. Unhardened steel or other die metal is then firmly fixed in a position which the coin on the free end of the bar will strike. The die metal is usually heated to cherry redness first. The free end of the bar is heavily weighted and can be dropped or tripped at a speed sufficient to produce enough kinetic energy to drive the coin deep enough into the die material to leave a clear intaglio.

Another way of accomplishing the same result is to place the coin and the die material face to face in a metal jacket and to set an explosive charge against the outside face of the coin. The explosive force will then drive the coin into the die material.

Only mediocre dies can be made by these methods, because certain portions of the die usually turn out to be weaker than others and need some hand engraving. Genuine coins used are destroyed, and therefore either common coins or electrotypes must be used to make false dies from impact.

With Powdered Metal:

Dies for forgeries can be produced out of powdered metal. The coin to be copied is placed in a steel cylindrical cup and covered with highly pulverized metal. A plunger fits the open end of the cup. The unit is placed in a hydraulic press, where sufficient pressure is applied to compact the powdered metal into the form of a die. After the compacted powdered metal die is withdrawn, it is heated so that the metal fuses in a sintering process. There is about five per cent shrinkage in the course of sintering, making the size noticeably inaccurate.



Forgers' work comes in all degrees of quality. "Pimply" surface at areas indicated by arrow reveal nature of fake 1898-B British Trade dollar.

In, addition, the pressure of compaction to produce a thick enough die for practical purposes results in crushing the detail of a coin, as it would be customarily composed of copper, silver or gold. Thus, powdered metal is most impractical for high quality forgery.

By Electrical Discharge Machining:

Spark erosion or electrical discharge machining is a technique by which a shaped piece of metal can be made to produce its own intaglio directly in another piece of metal without actual contact. The pattern or piece to be copied becomes one electrode and the material for the intaglio becomes the other electrode. These are positioned face to face, almost touching one another, so that electric energy can jump the distance between them. The spark naturally jumps along the path of least resistance between the closest metallic parts and disintegrates some of the metal on the intaglio electrode directly opposite the raised portions of the pattern electrode.

As areas of material of the intaglio electrode are eaten away, the spark gap selects the next closest parts to jump, until all parts of the pattern electrode are equidistant from all parts of the intaglio electrode. The space between the electrodes is filled with a flowing fluid, dielectric or nonconductor, which not only serves as a coolant but also as a means of washing away the disintegrated metal.

The lower the amperage and the higher the frequence of electric impulses, the more perfect the detail will be on the intaglio. The outlines of raised portions of the pattern electrode widen slightly in the corresponding part of the intaglio electrode due to arcing, but the makers of electrical discharge machines claim this spread or overcut can be held to as little as .0002 inches. Many times as much widening of design elements is not perceptible under routine magnification, particularly because of the normal variation in the striking pressure of older, genuine coins, the normal variation in the striking pressure of false coins, the wear on the genuine coins from circulation, and so forth.

The surface of the intaglio electrode is also uniformly and minutely pitted from the sparking. These little individual craters are not visible until high magnification is applied. If the process is carried out well, the general appearance is that of a soft satin matte finish.

There are some very severe additional drawbacks to the spark erosion process when applied to making a false die from a coin. The coin used as the pattern electrode must be positively attached to heavy metallic leads to become part of the electric circuit, and is damaged by such procedure. If destruction of the pattern coin is of no consequence or an electrotype is used, then this ceases to be a problem.

The most discouraging problem the forger has to face is that the pattern electrode also disintegrates from the spark discharge, the amount depending on the metals out of which the respective electrodes are made, and other factors. The usual ratio of disintegration of the pattern ranges from one fourth to equal that of the intaglio. This disrupts the accuracy of the intaglio image because the pattern electrode image erodes away during the sparking.

The means of reviving accuracy in the process is to substitute a new pattern electrode as the process proceeds so that the intaglio is almost complete when the last pattern electrode is connected up. The process can produce false dies of fine quality if up to four identical common coins or a similar number of high - quality electrotypes are available for destruction as pattern electrodes. If, however, the image on the intaglio electrode is substantially formed by impact first, the finishing can be readily accomplished by spark erosion using only one pattern electrode.

Those false coins which I have examined and which were struck with spark erosion dies came to light in England. The false dies had been somewhat hand engraved in a few areas on some to sharpen the detail which was lost in the erosion process. Two were missing a stop in the legend, apparently because the stop disintegrated from the pattern electrode during the electrical machining.

Due to poor workmanship, the spread of the design and lettering in some parts and its thin-

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Forgeries Present Problem To Hobby

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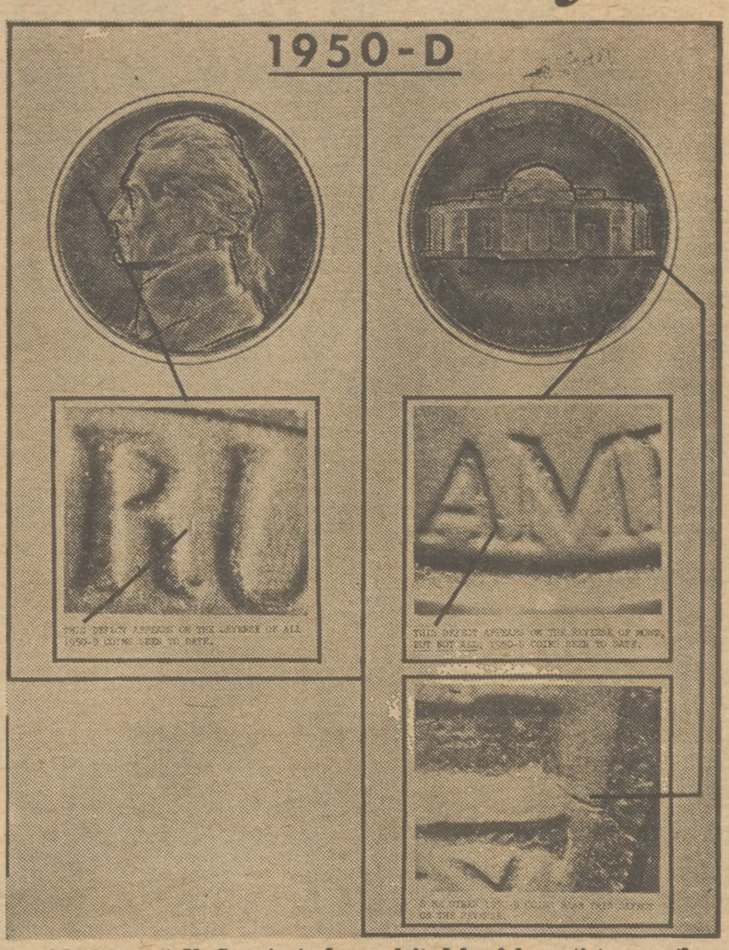

Most recent U. S. coin to be exploited by fake artists was the 1950-D nickel, believed by many to be a struck coin from dies made by the impact method. All pieces seen have common obverse defect, shown in square below coin; most have one of two reverse defects.

ness in others was particularly noticeable when compared to a genuine piece. Generally, however, the forgeries were deceptive because they were pre-19th century coins with very simple detail.

Dr. Schmidt of Bonn, Germany, first as an individual and subsequently for I. Hausmann & Co., A. G., has produced very deceptive Reichsmunzen from dies made with an electrical discharge machine. His early dies were recovered from the Rhine River, where he threw them, but, in spite of his conviction, he apparently still has his electrical discharge machining equipment and uses it for making what he wishes to be designated as "copies" rather than forgeries.

To add a bit of humor to this tragic menace, there is an advertising brochure of the leading manufacturer of spark erosion equipment in the United States, the title of which reads: "To Help You Make Money With Electrical Discharge Machining."

By Electrochemical Machining:

Electrochemical machining is the reverse of the electroplating process. Instead of metal being deposited on an electrode, it is removed from it. The pattern electrode is placed very close to the work piece in an electrolyte or conductive liquid. Direct current passes from a positively charged workpiece anode through the electrolyte to the pattern cathode. The surface of the workpiece is slowly eaten away and the dissolved metal is washed away by the electrolyte, which is circulated for this purpose and put under pressure to reduce bubbles. The pattern electrode does not disintegrate, and therefore needs no replacement. The workpiece is not pitted by the process, because there is no spark as there is in electrical discharge machining.

The difficulty in making false dies by this process is that the current is not confined to the shortest distance between points as in electrical discharge machining, but spreads as it passes through the electrolyte. This would make the false die fuzzy and spread the image. However, as the electrodes are placed closer and the current is controlled, the results improve.

A genuine coin used as a pattern would be somewhat damaged by the electrolyte, but an electrotype can be substituted. The electrochemical machining process for producing false dies which do not contain sharp corners in their lettering or design is a serious threat.

Cast Dies:

There are many methods to produce cast dies and there is nothing new about them.

The method commonly used by dentists for making gold caps, bridges and fillings is well known. First a soft agar-agar or rubberized mold is pressed on the teeth; this mold is cooled, hardened and set in soft plaster; when the plaster hardens the shape is again transferred from the plaster to hot wax; the hardened wax is set into a refractory investment and ports are inserted; the investment is baked to hardness, volitalizing the wax; then the investment is placed in a centrifugal casting machine, sometimes in a vacuum, where molten gold or other metal runs into the cavity and hardens on cooling. This system involves five transfers of the image and some sharpness of the detail is lost.

The method commonly used for reproducing sculpture by casting is a similar four-stage process. First a silicone rubber negative is formed around the model, then a wax positive is made from the silicone, then the wax is surrounded with a refractory clay slurry which is baked into a hard ceramic mold, and finally the metal is cast in the ceramic mold.

For some other applications, an improvement can be made in the four-stage process by substituting mercury for wax in the second stage. In this technique, mercury is poured into the negative, and the temperature is lowered until the mercury freezes into solid form. Then the ceramic slurry is formed around the frozen mercury, with no parting agent needed. After the slurry jells and the temperature is permitted to rise, the liquid mercury readily runs off, leaving the ceramic ready for baking. A metal positive can then be made in the ceramic mold.

False coin dies have in most cases been developed in a three-stage casting process; first a wax or plaster intaglio of the coin is made, then a transfer is made to a plaster or ceramic positive mold from which the die is cast (no pun intended). Coin die forgery has only required three stages because the false coin itself is struck as the fourth stage and is not soft molded.

Most cast false dies have imperfections arising in the course of the first two soft transfers. These imperfections often show up on the false coins as raised lumps, striations, blotches, and pimples. They arise from flaking off of particles of plaster, wax or ceramic, usually in the parting of one of the forms from the material to which its shape has been transferred. The principle difficulty, however, is the weakness of the relief. The letters and the design are not as sharp as in the genuine pieces, and the more delicate the design, the more some parts seem to be almost lost in the forgeries. Alfred Dieffenbacher's superb published studies of modern counterfeits include many examples of these difficulties.

When the metal used to cast a die changes from molten to solid form, there is a shrinkage. Some forgeries, if carefully examined under an optical comparator, are as much as two per cent smaller than genuine coins in design measurement. A careful forger must compensate for this shrinkage in order to prevent his forged products from being defective in this regard.

The planchet size is easily made to conform to the exact size of the genuine piece but conforming the design size requires advanced planning. The dentist in his five stage process obtains various amounts of expansion in the plaster or second stage, in the investment or fourth stage, and in the casting or the fifth stage. This he regulates in order to compensate for the shrinkage of the final cast at the end of the fifth stage. Selected materials in the plaster and in the investment can each contribute to the expansion of those molds, sometimes aided by water absorption for a specific period and by baking the ceramic investment at specific temperatures for specific periods.

In addition to these adjustments the ceramic mold itself can be heated at the time of die casting to a temperature at which the desired expansion of the heated mold will compensate for the contraction of the metal on cooling.

In the latter procedure, the ceramic mold and the cast metal cool together and shrink together. With variants in metal to be poured and in the developmental materials used in reaching the final mold, the false coin can be produced with detail virtually the same size as the genuine coin.

The real improvement in false cast dies has been the elimination of several transfers of design through molds. Coins, by their very die struck nature, have no undercut parts. Each face is generally flat. If, therefore, the refractory ceramic slurry is applied directly to the coin itself, a full imbedment would not be necessary, as only one face of the coin need be in contact with the slurry. The balance of the coin can remain free for easy release after the clay has partially hardened or been jelled with a binder material.

In the past, a principle reason why the coin was not used initially to make the ceramic mold was that the ceramic mold thus made would produce a die with raised relief rather than an intaglio die with which coins could be struck. This would have required a hardening of the false positive die and the use of a transfer press to impress the design on a working die. Until recent years this metal-to-metal transfer seems not to have been appealing to forgers because more than simple equipment was necessary.

A die or hub with raised relief is an advantage and not a disadvantage in faking coins, because it eliminates one soft-molding process. The transfer from hard steel to unhardened steel by pressure is much more accurate than a transfer from hard to fluid or pliable material. No parting agent is necessary, and thus the detail is not weakened.

This short cut to die forgery has been made possible by the development of better means to pulverize refractory clays into powder; by mixing these clays for controlled expansion purposes; by developing the clays to withstand without warping or flaking the temperatures of melted iron, chromium, etc.; by using excellent binding materials for the clay; by controlling the heat levels at which the refractories are baked; and by improvement in parting materials to prevent the pattern from sticking to the soft clay.

The one-stage die casting process can produce virtually perfect, positive dies, and therefore, virtually perfect forgeries can result.

Edges:

Once the forged dies are produced, there still remains the problem of imitating any design on the edge. The forger would have no problem with coins struck without a collar. A plain undecorated collar would likewise be simple to prepare and to use. A collar which would produce a reeded edge can be prepared in an automatic gear cutting, milling or hobbing machine, the reeds being any shape desired and in any proper number. It can also be prepared by electric discharge machining. Yet in the past some forgers failed to count the edge reeds and made their collars with the wrong number of reeds. Alfred Dieffenbacher's studies cite many examples of that error.

The raised lettered edge, the incuse lettered edge and other complex edge designs are discouraging to a forger as these apparently require hand cut segmented collars or milling dies. The coins selected for forgery therefore usually fall into the plain edge or reeded edge categories, as the other edges would make the products much more easily detected.

Surface Treatment:

The surface of a false die or a false coin can be mechanically treated to change some of its characteristics without perceptibly affecting its weight or design. This process is known as jet honing, vapor honing, or wet honing. It consists of an air jet blowing a liquid containing tiny grit. This application gently reshapes the surface so bombarded. The grit may consist of various materials, but spherical particles of glass seem to be the most effective. The glass beads suspended in liquid are air-ejected onto a surface through nozzles which may have needle orifices. The nozzles may be aimed by hand, or mechanically directed by automatically moving either the nozzle or the work. By the use of small orifices and microscopic glass beads, a smooth satin surface can be produced. Larger beads can be used to produce a strong matte surface.

The important feature of this honing is that if it is used skillfully, it will not only remove oxidation and discoloration, but also make a surface change shape without any perceptible removal of metal from the surface to which the jet is applied. If unskillfully applied, it leaves a rippled surface resembling the ripples in the sand on the beach caused by the ebb and flow of tides. Jet honing can be applied to portions of a die or coin by the application of a protective coat of liquid plastic to the balance. This process has been used to put a so-called Proof surface on the field of coins, to eliminate bruises and scratches and improve their general appearance. It can smooth out the tiny craters remaining on a die prepared with spark erosion. It can smooth out scratches on a die.

One of the best practitioners of the art of jet honing of coins is in jail for stealing the items which he needed for his work.

Detection:

In addition to visual and other standard means of detection of coin forgery, great reliance is now placed on nondestructive metallic analysis. X-ray fluorescence can produce both a qualitative and quantitative determination of the metal content of a coin, but most equipment penetrates the surface only a short distance.

A bulk specimen spectrograph can accurately determine the coin's specific metallic content, giving the percentage of each element present. With neutron activation, minute traces of elements can be located, and if they are unnatural the coin can be rejected. Similarly, if the purity of the metal in a coin is higher than was used in the period of the genuine coin's striking then the coin can be diagnosed as a forgery because it was made of electrolytically refined metal, etc. These tests are more effective on forgeries of the past than on quality forgeries of the present.

As has been shown, forgers can conquer the difficulties which can be exposed with these modern tests by use of planchets made from genuine coins. The state of the art has reached a point where perfection in forgery is here. Admittedly, the forger must have expensive sophisticated equipment and technical skills which, if otherwise applied, would permit him to earn a better living with much less risk.

The International Association of Professional Numismatists published in May, 1967, a 117-page report of its June, 1965 meeting in Paris on coin forgery. It points out the complete inadequacy, in virtually all countries, of laws to combat forgeries made for collectors. Discussion as to exact definition of words relating to forgery was also reported. This report is styled an "analytical report" but other than Dr. Schmidt's forgeries (none of which are specifically described) there is not one false coin mentioned, even though many of the membership were than aware of many unpublished die struck forgeries of the past few years.

How are the collectors to know, how are the sale of forgeries to be exposed, if a professional group, after undertaking a forgery project, publishes proceedings two years later, but does not publish the numismatic forgeries of which they were aware? Do they fear the general collapse in value of genuine rare coins if the quantity and quality of forgeries is announced? How do they expect collectors and inexperienced dealers to stop buying and selling forgeries if the forgeries are not published? Do they believe that others have the obligation to expose die struck forgeries?

Every competent numismatist, professional or amateur, has the responsibility to reveal publicly any unpublished die struck forgery data as soon as possible. The longer the delay in disclosure, the more difficulty will finally result.

The apathy of the public toward coin forgery is by far more excusable than the apathy of experienced individual numismatists or numismatic organiza-

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Forgery Of Coins Nearing Perfection

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tions. Obtaining the passage of effective laws throughout the world is a dream, but every jurisdiction which can tighten its forgery laws should be strongly urged to do so.

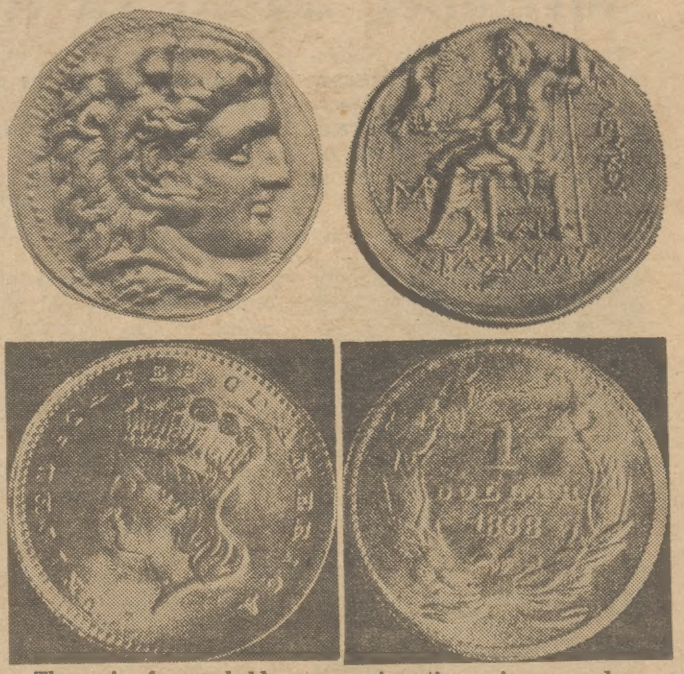
Passage of laws or the enforcement of laws does not relieve numismatists from using every means at their disposal to solve the problem of forgery. Numismatists can and must make a great effort to solve the problem themselves if they wish to maintain the dignity and integrity of numismatics. They should expel from membership or deny participation in numismatic events to any person who knowingly sells a forgery or knowingly buys a forgery, as commercialism encourages forgeries. They should require a seller to give a written or announced guaranty of genuineness and not permit a position of noninvolvement to be taken.

When a forgery is found in the possession of a person who claims to be innocent of knowledge of its status, he should be required to disclose in writing the source of his forgery and all facts he knows relating to it. So should his predecessors in ownership. There should be selected depositories for fakes so that they can be a reference collection for study and comparison. If forgeries are discovered they should not be returned routinely to the possessor so he can dispose of them again, otherwise some method for defacing forgering should be adopted. Prompt publication of all die struck forgeries should be required.

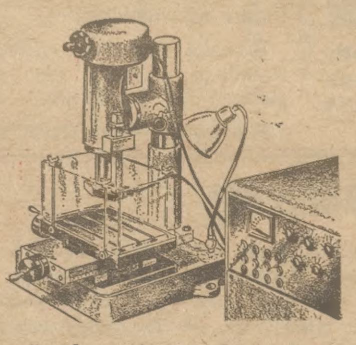
The use of optical comparators should be obtained so that they may be available to numismatic researchers for forgery studies or other work. The use of X-ray diffraction and X-ray fluorescence equipment should be sought from government and private laboratories for part time numismatic use. There are many things which others may suggest which may be effective in combating forgery.

If the forgery menace cannot be controlled, let's collect forgeries and genuine coins indiscriminately. Let's subsidize coin forgery to improve its quality so all collectors can have all rarities. Let's give prizes for the best forgeries of the year and honor the craftsmen. Let's keep up with the art world in the distribution of fakes; let's plant forged Spanish gold and silver coins and bars in shipwrecks so that on each dive a numismatic skin diver will find one. Ladies and gentlemen we have a frightening problem as coin forgery is nearing perfection.

My appreciation for assistance in gathering the facts for this presentation goes to McDonnell-Douglas Aircraft Corp. (Delbert Hahn), Moog Industries, (Kenneth Shade), Avnet-Shaw Corp. (Joel Meisner), General Numismatic Corp. (Joseph M. Segel and Brian G. Harrison), Modern Engineer Co. (Robert Lamping), Nobillium Co., Philips Lamp Co., Goodyear Rubber Co. (Robert M. McMillan), Anocut Engineering Co. (Garrett K. Vandenburgh), Jack Allen, Don Allison, Albert Baldwin, Alfred Dieffenbacher, George Fuld, Max Kornfeld, Richard Picker, John Pittman, James Sloss, L. Harold Spradley, Don Taxay, and others. There were also those whose noncooperation and concealment of facts only served to stimulate further research in the field.



The coin forger holds no numismatic series sacred — as evidenced by the copy of the tetradrachm of Seleucis I, above, and the 1868 U.S. gold dollar, both copies being cast.



Spark erosion machine, shown with generator, is sophisticated modern tool for forgers producing die-struck counterfeits.

Police Locate Bogus $20 Bills

Banks and business firms in Lexington, Ky., have been alerted to be on the lookout for bogust 20 bills, after two had been found in the city.

Secret Service agent John Foushee indicated there may be a connection with counterfeit bills previously passed in Munfordsville, Ky.

A drug store and a bowling alley were victims of the most recent passings of the phony money in Lexington, police said.

Coole Releases Volume I Of 10-Book Encyclopedia

"Bibliography of Far Eastern Numismatology and A Coin Index," volume I of a proposed 10-volume "Encyclopedia of Chinese Coins," by the Rev. Arthur B. Coole, Denver, Colo., is scheduled to be released on November 15. The 583-page volume will retail for $14.75.

Limited to a printing of 1,000 copies, the volume will become a basis for the following nine books in the work, and code numbers listed in this first volume will be used both for books and coin type references.

Condensed in the volume are works of 42 bibliographies, over 600 Chinese numismatic works, 550 Japanese books and 373 magazine articles; 1,418 western language books or magazine articles; 85 photographs of authors on Oriental numismatic works; 26 references in Chinese official histories and 1,300 cast coins or Yasheng pieces, listed in the coin index.

Rev. Coole is the author of "Coins in China's History," now in the fourth edition, first published in Tientsin, China, in 1936. In 1940 he published "A Bibliography on Far Eastern Numismatics and An Union Index of the Currency, Charms and Amulets of the Far East."

His interests in Chinese numismatics developed through the interests of his father, Dr. Thomas H. Coole and he started collecting coins at the age of nine in Futienhsien, Fukien, China. The Thomas Henry Coole Collection of Chinese Coins is now on exhibit at Baker University, Baldwin, Kansas, the alma mater of both Thomas and Arthur Coole.

Rev. Coole was an associate principal at the Peking, China, academy and field treasurer of the Methodist Church in China.

Professor Hitoshi Kozono of the Fukuoka Middle school, Fukuoka, Japan, assisted Rev. Coole in the preparation of the Japanese portion of his bibliography, and Lieutenant Commander Howard Franklin Bowker (U. S. Navy, retired), assisted with the Chinese section.

Rev. Coole says volume two of the Encyclopedia will deal with the origin of coinage in China, planned for publication in late 1968 or early 1969. Title of the volume will be "Transition from Barter to Coins — Bronze Models."

Other volumes planned include "Early Round Coins," "Western Han Through North and South Dynasties (206 B. C. — A. D. 589); "Sui Through Five Dynasties and 12 Kingdoms," "Sung and Southern Sung — Chin and W. Liao (A.D. 960-1260)," and "Yuan and Ming Dynasties (A.D. 1280-1644)."

Also, "Ch'ing Dynasty — Start of Machine-Minting (A.D. 1644-1911)," "The Republic of China to the Present (A.D. 1912-) and "The Ya-Sheng Sector." The latter volume will deal with charms, amulets, temple pieces, fantasies, curiosities, fraudulent and counterfeit pieces, commemoratives, medallions, souvenir medals, pseudo coins and the catch-alls.

Rev. Coole suggests that if local coin or hobby shops do not carry volume 1 of his Encyclopedia, collectors may write to him at 219 South Williams street, Denver, Colo. 80209.

encyclopedia of chinese coins

volume I

bibliography of far eastern numismatology and a coin index

中國古今泉幣辭典

coole kozono bowker

Cover of the Rev. Arthur Bradden Coole's "Encyclopedia of Chinese Coins, Bibliography of Far Eastern Numismatology and a Coin Index," the first of a 10-volume work planned by Rev. Coole. The volume retails for $14.75.

Fake Notes Figure In Ditto Case

An assistant U. S. attorney, in Federal Court, Baltimore, Md., promised to prove that local character Johnny Ditto, alias John J. DiTommaso, was the "contact person" in a $132,000 counterfeit ring.

The 45-year-old Ditto, presently serving a two-year term in Federal prison on a charge of having obtained a $23,500 Federal Housing Administration loan by giving false information, is charged with conspiracy to sell the counterfeit bills.

Alleged members of the ring already convicted of conspiring to print and printing the counterfeit bills include Nelson H. Campbell, 30, and Ronald J. Beatty, 32.

Campbell's brother, William, 29, has entered a plea of guilty to charges of concealing $4,000 in counterfeit bills last December. Guilty pleas have also been entered by Joseph J. Morea and William Chavis, who were to be called as government witnesses in the case.

Four Share Top Honors In Kansas

The Romine brothers, (Reggie, Ricky, and Rory,) and Robert Phillips tied for top honors at the Plainville, Kan., Coin Club Show. Duplicate trophies were presented.

Other winners were Mr. and Mrs. Louis Shipshee, Mr. and Mrs. Vernon Maddy, with Neal Andreson, club president making the presentations.

Florida Beaches Give Up Treasure

Treasure seeking, without maps to buried pirate loot, keys to brass-bound chests or burglary tools combined with a healthy exercise regimen has proven profitable in many ways to Mr. and Mrs. C. G. Adams, St. Petersburg, Fla.

Combing the Florida beaches with an electronic metal detector turns up coins, keys and spoons, the Adams' note. As much as $5 per walk has been recovered. Recently, during a 20 - minute walk on a Pass-a-Grille beach, $1.11 was found.

No 'Liberty'

The Flying Eagle cent issued in 1857 and 1858 is the only coin in this entire series which does not have the word "Liberty" incorporated in its design.

Richard E. Reis Returns From Two-Year World Trip

Coin dealer Richard E. Reis, Elgin, Ill., recently returned from a two-year world journey which carried him to over 50 countries and through 100,000 miles of travel.

Reis told Coin World, "I covered Europe, Russia, North Africa, all of the Middle East, Pakistan, India, Japan and Hong Kong. I was in Macao during the bloody riots of December, 1966.

"I picked up some nice coins."

Asked about his future plans, Reis explained, "I plan to start issuing my coin price lists again in early October. They will contain crowns, minors, ancients, some gold and Proofs, and my specialty (complete sets from about 25-35 different countries).

"Collectors, customers and old friends who received my lists before will automatically be placed on my mailing lists.

"New customers," Reis added, "wishing to receive a free single copy of my list may request it on a postcard. Generally, for non-buyers there is a charge of $1 per year to receive all my lists."

Interested persons may contact Reis at 465 Slade avenue, Elgin, Ill. 60120.

Cecil Edwards Dies At 82

Cecil B. Edwards, 82, Wichita Kan., who was a member of the American Numismatic Association, and former secretary of the Wichita Coin Club, died October 27 at the Wesley Medical Center, Wichita.

Mr. Edwards was one of three original members of the Wichita club. He was nationally recognized as a lay expert on the subject of counterfeiting, and was a frequent contributor to The Numismatist, and the American Bankers Association magazine "Banking."

Mr. Edwards retired in 1955 after 52 years with the Fourth National Bank, Wichita. When he retired he was chief teller.

Survivors include his widow, Hannah, and two sons, Robert and Jack, and four grandchildren.

Funeral services were held October 31 at the Cochran Mortuary, Wichita.

Cecil B. Edwards

Two Former Mint Workers Die

Death claimed two former employees of the Bureau of Engraving and Printing in a single week recently. Lucy Stewart Brasel died in Washington, D. C., at the age of 88, and Henry C. Anderson, 99, died in Rockville, Md.

Mrs. Brasel had been employed by the Bureau from 1900 to 1907; Mr. Anderson began a 41-year tenure there in 1893. Paper currency still was printed on hand presses at that time.

Successful Event

The Lake County Coin Club, Waukegan, Ill., convention was declared successful by its chairman, Peter J. Nordigian, with an attendance of over 400. Awards were won by George Petr, Mona Russell, and George Jackabinski.